CLAIMS:

What is claimed is:

1. A logically partitioned data processing system, comprising:

a plurality of logical partitions;

a plurality of operating systems, each assigned to a separate one of the plurality of logical partitions;

a plurality of assignable resources, wherein each of the plurality of assignable resources is assigned to one of the plurality of logical partitions;

at least one non-assignable resource; and

a hypervisor, wherein the hypervisor provides a set of services to each of the plurality of logical partitions allowing a desired result to be achieved by each operating system without modifying the non-assignable resource.

2. The logically partitioned data processing system as recited in claim 1, wherein the set of services comprise a service for creating a new translation table for mapping a change in a logical address to a physical address without modifying an existing translation table.

3. The logically partitioned data processing system as recited in claim 2, wherein the existing translation table is a page frame table.

4. The logically partitioned data processing system as recited in claim 1, wherein the non-assignable resource is a page frame table.

5. The logically partitioned data processing system as recited in claim 1, wherein the non-assignable resource is a mode of operation of a processor.

6. The logically partitioned data processing system as recited in claim 1, wherein instructions for executing the hypervisor are contained within firmware.

7. A method for protecting the integrity of a logically partitioned data processing system, the method comprising:

receiving, at a hypervisor, a request from an operating system to perform an operation;

responsive to a determination that the request would not result in direct access by the operating system to an unassigned resource, performing the operation.

8. The method as recited in claim 7, further comprising:

responsive to a determination that the request would result in direct access by the operating system to an unassigned resource, refraining from performing the operation.

9. The method as recited in claim 7, wherein the request is a request to map a partition resource to a memory address and performing the operation comprises creating a translation table entry to map the memory address to an entry in a page frame table, wherein the entry in the page frame table corresponds to the

partition resource.

10. The method as recited in claim 7, wherein the hypervisor is implemented as firmware.

11. A method in an operating system executing within a logically partitioned data processing system, the method comprising:

determining that a system resource needs to be modified;

responsive to a determination that the system resource is one for which access is denied to the operating system, requesting a service from a hypervisor to accomplish a functionally equivalent task.

12. The method as recited in claim 11, further comprising:

responsive to a determination that the system resource is not one for which access is denied to the operating system, directly accessing the system resource to apply the modification.

13. The method as recited in claim 11, wherein the hypervisor is implemented as firmware.

14. A computer program product in computer readable media for use in a data processing system for protecting the integrity of a logically partitioned data processing system, the computer program product comprising:

first instructions for receiving, at a hypervisor, a request from an operating system to perform an operation;

second instructions, responsive to a determination that the request would not result in direct access by the operating system to an unassigned resource, for performing the operation.

15. The computer program product as recited in claim 14, further comprising:

third instructions, responsive to a determination that the request would result in direct access by the operating system to an unassigned resource, for refraining from performing the operation.

16. The computer program product as recited in claim 14, wherein the request is a request to map a partition resource to a memory address and performing the operation comprises creating a translation table entry to map the memory address to an entry in a page frame table, wherein the entry in the page frame table corresponds to the partition resource.

17. The computer program product as recited in claim 14, wherein the hypervisor is implemented as firmware.

18. A computer program product in a computer readable media for use in a logically partitioned data processing system for providing modification of system resources by an operating system executing within the logically partitioned data processing system, the computer program product comprising:

first instructions for determining that a system resource needs to be modified;

second instructions, responsive to a determination that the system resource is one for which access is denied to the operating system, for requesting a service from a hypervisor to accomplish a functionally equivalent task.

19. The computer program product as recited in claim 18, further comprising:

third instructions, responsive to a determination that the system resource is not one for which access is denied to the operating system, for directly accessing the system resource to apply the modification.

20. The computer program product as recited in claim 18, wherein the hypervisor is implemented as firmware.

21. The computer program product as recited in claim 18, wherein the computer program product comprises an operating system.

22. A system for protecting the integrity of a logically partitioned data processing system, the system comprising:

first means for receiving, at a hypervisor, a request from an operating system to perform an operation;

second means, responsive to a determination that the request would not result in direct access by the operating system to an unassigned resource, for performing the operation.

23. The system as recited in claim 22, further

comprising:

third means, responsive to a determination that the request would result in direct access by the operating system to an unassigned resource, for refraining from performing the operation.

24. The system as recited in claim 22, wherein the request is a request to map a partition resource to a memory address and performing the operation comprises creating a translation table entry to map the memory address to an entry in a page frame table, wherein the entry in the page frame table corresponds to the partition resource.

25. The system as recited in claim 22, wherein the hypervisor is implemented as firmware.

26. A system for providing for modification of system resources by an operating system within a logically partitioned data processing system, the system comprising:

first means for determining that a system resource needs to be modified;

second means, responsive to a determination that the system resource is one for which access is denied to the operating system, for requesting a service from a hypervisor to accomplish a functionally equivalent task.

27. The system as recited in claim 26, further comprising:

third means, responsive to a determination that the

system resource is not one for which access is denied to the operating system, for directly accessing the system resource to apply the modification.

28. The system as recited in claim 26, wherein the hypervisor is implemented as firmware.